

ADDITIONS TO THE NEARCTIC ANTHICUS (COLEOPTERA:  
ANTHICIDAE)<sup>1</sup>

FLOYD G. WERNER

Department of Entomology, University of Arizona, Tucson 85721

ABSTRACT—Two new species are described, *Anthicus antiochensis* from Antioch, Contra Costa County, California, and *A. musculus* from southern Arizona. *Anthicus crinitus* LaFerté is recorded from the Western Hemisphere for the first time, from Puerto Rico and Florida; it is widely distributed in Africa and southern Asia.

Since my revision of the genus *Anthicus* in North America (Werner, 1964), I have had opportunity to examine additional collections, and have re-examined some previously available series. As a result, I am now able to add 2 new species to the anthicid fauna of North America, both from north of Mexico, and to mark an apparently recent introduction of an Old World species into Florida. Many new state records have accumulated; these will be summarized in the forthcoming catalog of Nearctic Coleoptera.

*Anthicus crinitus* LaFerté

Fig. 2, 5

*Anthicus crinitus* LaFerté, 1848: 204-5 (type-loc.: Egypt or Senegal). Bonadonna, 1956: 117 (adds Algerian Sahara, lists Canary Islands, N. Africa, Asia Minor, Arabia); 1959: 124 (adds Mauritania); 1960: 53 (adds Afghanistan, lists Cape Verde Islands, central Africa, India, and probably Japan); 1963: 590 (adds Ennedi and Tchad).

2.5-3.2 mm, body rufescent to brown with all but bases of femora and often head darker, tibiae paler; elytra bright rufescent with extensive dark markings that leave rufescent basal 2.5 except for small humeral darkenings and a post-median cordiform marking across both elytra in most specimens. The cordiform marking disappears 1st in dark specimens. Shiny, elytra with fairly conspicuous long, subdecumbent setae and less conspicuous decumbent setae about ½ as long, pointed in same direction.

Redescribed from ♀, Vero Beach, Florida, 3.24 mm long. Head subtruncate at base, with shallow median excavation, feebly convex, 0.54 mm long, 0.67 wide across eyes, 0.58 behind, smooth, shiny, with sparse, distinct but shallow punctures, ca. 0.06 mm center to center, bearing shaggy decumbent setae and erect tactile setae, both ca. 0.10 mm. Middle of frons bulging slightly, puncture-free, flanked by small longitudinal groups of denser punctures, convergent behind and extending across clypeofrontal suture onto sides of clypeus. Eyes large, prominent, 0.32 × 0.23 mm, separated by 0.40 and 0.23 mm from base. Junctions of facets with very short, erect setae, ca. 0.01 mm. Antennae luteous, gradually

<sup>1</sup> Journal Paper No. 2354 of the Arizona Agricultural Experiment Station.

thicker apically; measurements in 0.01 mm, base to apex: 15 7, 10 6, 13 6, 10 6, 9/7, 10/7, 10/8, 9/8, 10/9, 10/9, 16 9; segment 1 simple. Palpi luteous, last segment of maxillary palpi securiform,  $0.14 \times 0.10$  mm. Pronotum widest and sides rounded at apical 2/5, gently convex, 0.70 mm long, 0.48 wide across base, 0.47 at constriction, 0.57 maximum, 0.25 at distinct collar; surface shiny, with punctures and setae slightly denser than on head. Elytra 2.0 mm long, 0.80 wide at distinct humeri, 1.12 maximum; surface shiny, punctures moderately dense, 0.06 mm center to center, slightly denser and deeper near base; omoplates just discernible. Setae double; long, 0.16 mm, slightly curved and subdecumbent; and much shorter, ca. 0.07 mm, decumbent; tactile setae nearly erect, 0.10 mm, not very conspicuous. Underside of thorax with punctures and pubescence similar to elytra, of abdomen similar but punctures much smaller. Legs moderately slender, especially middle and hind tarsi; front femur  $0.58 \times 0.20$  mm, front tibia  $1.0 \times 0.10$ , hind femur  $0.83 \times 0.18$ ). ♂ (Ponce P.R.) with apex of sternum 7 slightly excavated, not otherwise modified; tergum 8 with apical zone ca. 0.25 mm wide, demarcated anteriorly, nearly flat, finely punctulate and pubescent.

Specimens examined: FLORIDA: Indian River Co.: Vero Beach (10 June 1964, W. L. Bidlingmaier, suction trap, ♀, Fla. State Coll. Arthrop.). Gadsden Co.: Quincy (1971, in pitfall trap in soybean field on Agr. Exp. Sta., 1, U. Fla.). GREATER ANTILLES. PUERTO RICO: Ponce (28 Apr. 1936, Dozier, 5, MCZ); Isla Mayaguey, Parguera (18 Dec. 1962, Paul & Phyllis Spangler, 1, USNM); La Parguera (29 July 1969, H. & A. Howden, 1, CNC); Fortuna A. E. S. (March 1968, F. Fisk, 2, Coll. D. S. Chandler). There are 10 additional specimens in the USNM without data, 8 of them on distinctive H. S. Barber multiple hair mounts.

The peculiar postmedian pale mark of the elytra is produced by a slightly antemedian dark band that narrows toward, and may be interrupted at the middle, this connecting laterally with dark sides behind middle and apex. This mark and the double elytral pubescence would serve to distinguish this species from all others in our fauna. It would run to couplet 32 in Werner (1964); this couplet can be expanded to a triplet to include reference to the markings, which are different from those of either alternative listed.

This is the first time that the species has been reported from the New World. It probably has become established only recently. The first records are from Puerto Rico, 1936. It has been taken there several times since, and more recently from Florida. Laferté's 2 specimens indicated a wide range across northern Africa; since 1848 the known range in the Old World has been extended east to Afghanistan and India, possibly to Japan, and west to include the main islands off the coast of North Africa. There are some additional localities, as well as synonymy of several Marseul species, listed in the Junk catalog (Pic, 1911); I believe that the records cited by Bonadona have been more critically examined. My identifications have been based on comparison with specimens from Afghanistan identified by Bonadona.

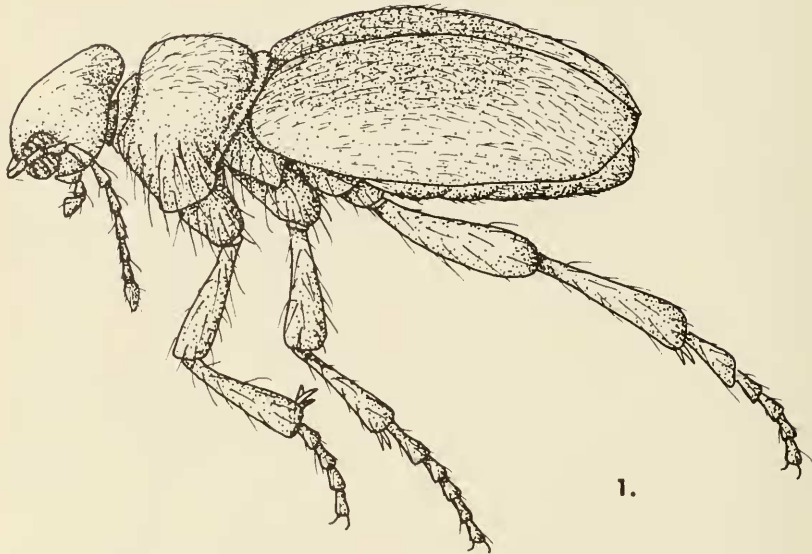


Fig. 1. *Anthicus antiochensis*, male. Drawing by Wynne Brown.

*Anthicus antiochensis* Werner, new species

Fig. 1, 4

Very large, 4.7–5.4 mm, moderately robust, with subtruncate elytra and shaggy pubescence on underside and legs; head subtriangular; stramineous, elytra with a slightly postmedian dark cloud of variable extent and intensity, and a narrow subapical sutural mark that is slightly darker. Outer edge of front tibia very sharp, modified for digging. ♂ 4.70–5.40 mm, mean 4.97, SD 0.162,  $n = 19$ ; ♀ 4.55–5.15 mm, mean 4.84, SD 0.21,  $n = 5$ .

Holotype ♂, 4.90 mm. Head subtriangular, 0.80 mm long to clypeofrontal suture, 1.05 wide across eyes, 0.95 behind; disc only slightly and very evenly convex, curve of front and eyes almost continuous, only a narrow groove setting off the eyes. Eyes moderately prominent,  $0.37 \times 0.28$  mm, 0.70 mm apart and 0.60 from base; facets fine and even, separate, with erect setae at junctions, ca. 0.01 mm. Head surface smooth, but not obviously so because of moderately dense, 0.05 mm center to center, shallow but sharply defined punctures and appressed pale pubescence, 0.09 mm, grading to shaggy setae ca. 0.35 mm long beneath. Clypeofrontal suture well defined, transverse. Palpi small, last segment of maxillary palpi securiform,  $0.21 \times 0.14$  mm; labial palpi very small. Galea and mentum apparently modified for digging by being slightly platelike. Some of setae of underside of head long and shaggy, others about as on top, intermixed. Antennae moderately slender, gradually thickened apically, with subdecumbent setae and suberect tactile setae that are somewhat shaggy under magnification; measurements: 27/14, 16/9, 25/8, 25/8, 26/9, 25/10, 26/10, 23/10, 21/11, 21/11, 27/11.

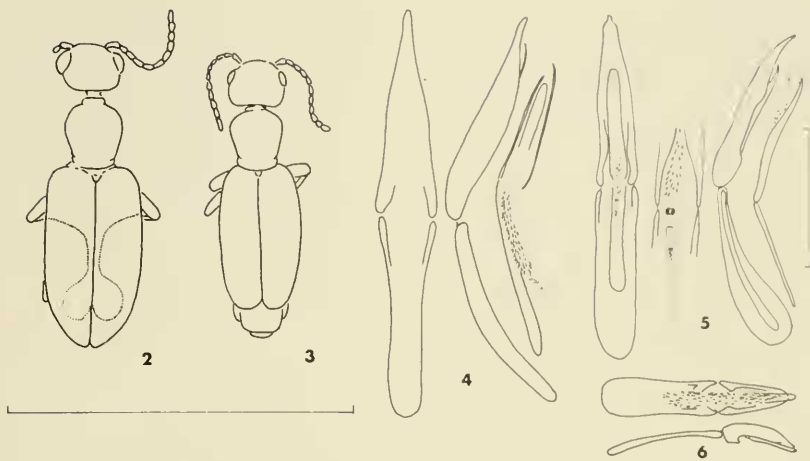


Fig. 2. *Anthicus cribratus*, Ponce, Puerto Rico. Fig. 3. *A. musculus*, paratype from type-locality. Fig. 4. *A. cribratus*, Ponce, Puerto Rico, aedeagus in ventral and left lateral views, at horizontal line = 1 mm. Fig. 5. *A. antiochensis*, paratype, same, at vertical line = 1 mm. Fig. 6. *A. musculus*, paratype from type locality, same, at horizontal line = 1 mm.

Pronotum slightly flattened, 1.10 mm long, 0.70 wide across base and constriction, 1.08 maximum, 0.45 at the short collar. Punctures and pubescence slightly denser than on head, setae grading to long and shaggy on underside. Elytra 3.0 mm long, 1.3 wide at the distinct humeri, 1.7 maximum, slightly swollen and with suture distinctly but not sharply elevated; omoplates not evident; apex truncate, slightly produced at suture; smooth, punctures moderately dense, ca. 0.04 mm center to center at base, slightly sparser behind; setae decumbent, almost appressed, ca. 0.11 mm long dorsally, grading to ca. 0.21 low on sides; tactile setae ca. 0.16. Hind wings apparently fully developed and functional. Underside of thorax with punctures similar to elytra, of abdomen feebly microreticulate with finer and denser punctures. Sternum 7 less produced than in ♀ but not otherwise modified; tergum 8 ca. 0.53 mm wide, with a slight excavation at apex producing blunt points ca. 0.14 mm apart.

Legs with some long setae, the front tibiae, especially, modified for digging. Front femur  $0.95 \times 0.30$  mm, front tibia  $0.95 \times 0.13$ , hind femur  $1.36 \times 0.32$ . Front tibia flat behind, with dense pubescence on flexor surface, the outer edge sharp and augmented by a densely-packed edging of overlapping scales. Internal angle of apex with a recurved hook, 1 spur behind hook normally long and nearly straight, and another,  $\frac{1}{2}$  as long, slender and inconspicuous, just beside it. Outer apex bluntly produced, with 2 spatulate setae plus 1 more normal seta mesal to them. Front tarsi slightly produced laterally, with strong but not highly modified, slightly curved setae. Middle and hind tibiae not fossorial, middle with a small curved spine and 2 normal spurs. ♀ tibiae as in ♂ but without recurved spine on front and middle tibiae; smaller spur of front tibiae very tiny. Hind tibial spurs long and slender, barely tapered.

Holotype ♂: Antioch, Contra Costa County, CALIFORNIA, June 29, 1953, R. O. Schuster, in California Academy of Sciences. Paratypes: all topotypical; 18 eutopotypical; 3—June 10, 15, 1952, J. G. Rozen; 1—May 19, 1952, P. D. Hurd; 1—Oct. 5, 1953, P. D. Hurd & Wasbauer.

Very distinct because of its large size, long ventral setae and fossorial front tibiae. It would run to couplet 44 in Werner (1964) and can there be treated by inserting a couplet, for presence vs. lack of long ventral setae and fossorial front tibiae, between couplets 43 and 44. It might also be placed in couplet 13, but differs from both species in this couplet by having the long elytral setae confined to lateral areas, and in having fossorial front tibiae. Many of the specimens have adhering grains of fine sand, indicating a dune association.

*Anthicus musculus* Werner, new species

Fig. 3, 6

1.66–2.00 mm, subparallel, slightly flattened; rufescent, appendages slightly paler; shiny, with moderately dense, sharply-defined punctures and decumbent pubescence; tactile setae suberect, short and slender. Of aspect of a small, pale *Vacusus*, but with mesosternum not expanded. ♂ 1.66–1.93 mm, mean 1.76, SD 0.07, n = 11; ♀ 1.80–2.00, mean 1.89, SD 0.07, n = 6. Wingless specimens have the sides of the elytra slightly incurved anteriorly and the humeri weak.

Holotype ♂, 1.66 mm. Head 0.35 mm long, 0.38 wide across eyes, 0.35 behind, subquadrate, truncate at base, with narrowly rounded temporal angles. Surface smooth, shiny, with moderately dense, well-defined but small punctures, 0.02–0.03 mm center to center; intervals nearly flat; punctures absent from a narrow midzone. Setae appressed, fine, 0.04 mm, tactile setae erect, fine, 0.03. Eyes moderately prominent, 0.13 × 0.10 mm, with erect simple setae, ca. 0.01 mm, at junctions of facets; widely separated, by 0.27 mm; 0.17 mm from base. Measurements: 8/6, 6/5, 7/5, 7/5, 7/5, 7/5, 7/5, 7/6, 7/6, 7/6, 10/6. Segment I pedunculate but not strikingly so, segments 7–10 grading to nearly quadrate. Last segment of maxillary palpi securiform, 0.09 × 0.06 mm. Pronotum with surface and pubescence similar to head, 0.41 mm long, 0.26 wide at base, 0.25 at constriction, sides just perceptibly concave from there to widest, 0.34 mm, at apical  $\frac{1}{4}$ , 0.15 at distinct collar. Elytra somewhat flattened, without omoplates, 0.90 mm long, 0.36 wide at the weak humeri, 0.50 maximum, the sides very gently and almost evenly convex from humeri to separately rounded apices; surface similar to forebody, punctures deeper and less sharply defined, ca. 0.03 mm center to center, setae decumbent, 0.04 mm, tactile setae suberect, 0.03, inconspicuous. Hind wings absent or highly vestigial. Underside of thorax with punctures similar to pronotum, of mesothorax with some fine microreticulation of intervals; abdomen very finely punctulate and with appressed setae. Sternum 7 not modified; tergum 8 0.22 mm wide, apical area darkened but not delimited anteriorly. Front femur 0.30 × 0.10 mm, front tibia 0.22 × 0.05, hind femur 0.38 × 0.10. Front and middle tarsi noticeably expanded.

Holotype ♂: 5 mi. W. Marana, Pima Co., ARIZONA, 28 April 1972, D. S. Chandler, under cow dung, deposited in USNM. Paratypes:



ARIZONA: Gila Co.: Cutter (13 July 1949, F. Werner & W. Nutting, 2♀♀). Maricopa Co.: Wickenburg (H. K. Gloyd, lt. trap, 22-23 Aug. 1950, 2♂♂, 2♀♀). Pima Co.: Marana (eutopotypical, 7♂♂); Sta. Catalina Mts. (Sabino Cn., 2500 ft., 26 July 1948, F. Werner & W. Nutting, ♀). Sta. Cruz Co.: Patagonia (4 mi. SW, on Sonoita Cr., 3 Aug. 1952, H. B. Leech, ♀, Cal. Acad. Sci.).

Because of its small size and uniform rufescent color, *musculus* would be most easily confused with *sonoranus* Werner. It reaches the last couplet, 55, occupied by *sonoranus* and *obscurellus*, in my 1964 key to species. The differences from *sonoranus* are not great, but appear to be consistent. Wingless specimens with the lateral margins of the elytra convex are quite identifiable; winged specimens are much more similar. The main points of difference seem to be that the first antennal segment is much less sharply pedunculate and that the head punctures are not as deep. *Sonoranus* has the first antennal segment almost as sharply pedunculate as *ancilla* Casey, a much larger species from farther north. In case of doubt, the blunt tip of the tegmen of the male aedeagus of *musculus* contrasts greatly with the slender apex of this structure in *sonoranus*. Wingless *sonoranus* with the side margins of the elytra convex can be distinguished from *obscurellus* LeConte by their smaller size, paler color, and more coarsely punctured head. The tegmen of the male of *obscurellus* is sharply notched before the apex. It is unlikely that the ranges of the two overlap, since *obscurellus* is found only on the Pacific Coast from central California northward.

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